this circle maps into the same cardioid.

The images of $\gamma = 2$, $\gamma = 3$, $\gamma = \lambda_{cr}$, and $\gamma = 4$ are easily checked to be $\mu = 0$, $\mu = 3/4$, $\gamma = 1.4\ldots$, and $\mu = 2$.

When $\gamma = 2.55 - .96i$, $\mu = (\gamma-1)^2/4 - (1/4)$

$= (1/4)(1.55 - .96i)^2 - .25 = \underline{[(1.55)^2 - (.96)^2]} - .25$

$- (1/2)(1.55)(.96)\, i \quad \Rightarrow$

$\boxed{\mu = .120 - .744\, i}$ This is a point in the bulb at the 6 o'clock location of the cardioid.

Inserting w_ℓ into (1.2.38) gives

$$w_\ell = w_\ell^2 - \mu \Rightarrow w_\ell^2 - w_\ell - \mu = 0 \Rightarrow$$

$$w_\ell = \frac{1 \pm \sqrt{1 + 4\mu}}{2} = (1/2) \pm \sqrt{\mu + (1/4)}\,.$$

But, $\mu + 1/4 = (\gamma - 1)^2/4 \Rightarrow$

$$w_\ell = (1/2) \pm \sqrt{\frac{(\gamma-1)^2}{4}} = \frac{1}{2} \pm \frac{(\gamma-1)}{2} = \frac{\gamma}{2} \text{ or } 1 - \frac{\gamma}{2}$$